

REMARKS

Applicants respectfully request entry of the amendments and remarks submitted herein. Claims 1 and 19 have been amended for clarification purposes.

Claims 1-19 and 21 are currently pending. Reconsideration of the pending application is respectfully requested.

The 35 U.S.C. §103 Rejections

Claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vidal et al. (U.S. Patent No. 4,338,343). According to the Examiner, Vidal et al. teach that it is known to use a sulfur-containing product on corn, which is intended to be made into other products such as flour, which contains starch. Applicant notes that, without acquiescing to the Examiner's rejection, claims 1 and 19 have been amended to remove the references to thiosulfate and sodium dithionite. This is solely to simplify the arguments below. This rejection is respectfully traversed with respect to the pending claims.

Sulfites (e.g., sodium bisulfite, or sodium sulfite) or sulfur-containing compounds that produce sulfites (e.g., sulfur dioxide dissolved in water) have been used in wet milling as an antimicrobial to control undesired microorganism growth (spoilage) and to disrupt the disulfide bonds within the protein matrix that encapsulates the starch granules so that highly purified starch can be obtained. The corn and millet kernels, however, have extremely compact, tight endosperm structures that impede the uptake of large chemical molecules. Because of their size, charge, and solubility, sulfites are able to penetrate the grain and the structures therein to disrupt the protein bonds. Molecules larger than sulfites and having solubilities and charges that differ from sulfites have not been reported to penetrate the kernel and structures therein to release starch from protein as well as do sulfites.

Surprisingly and unexpectedly, it was found that the particularly claimed compounds (i.e., non-protein, non-amino acid, non-vitamin, organic sulfur containing compounds) are able to penetrate the kernel and structures therein and result in improved release of starch during wet-milling. The claimed compounds provided a purer starch in higher quantities than did the

control, sodium bisulfite. The effectiveness of the claimed compounds was surprising and unexpected.

Vidal et al. only teach the use of inorganic forms of sulfides and sulfites. Since Vidal et al. only teaches the use of inorganic forms of sulfides and sulfites for the purpose of preventing microbial contamination, Vidal et al. can not teach the use of the claimed agents (i.e., non-protein, non-amino acid, non-vitamin, organic sulfur containing compounds) for the purpose of improving the yield and purity of starch. As indicated herein, the use of sulfites is well known in the art of wet milling, and the present disclosure provides an improved alternative to sulfites.

In view of the remarks herein, Applicants respectfully request that the rejection of claims 1-21 under 35 U.S.C. §103(a) be withdrawn.

CONCLUSION

Applicants respectfully request allowance of claims 1-19 and 21. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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